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14. ABSTRACT Prostate cancer disproportionately afflicts African-American men. As such, we feel that it is critically important to recruit researchers from this population if we are to conquer this disease. Numerous programs have attempted to recruit minorities to biomedical research and prostate cancer in particular. Often this involves a short period of research immersion during a summer semester. However, it has been shown that many of these trainees do not persevere in the selected area due to the singular nature of the experience. Our goal is to formalize a program to broaden the scope of and enlarge Tuskegee University's prostate cancer research, which will be accomplished through targeting interested undergraduate students early during their science studies at Tuskegee University and enabling them to participate in summer research and education training periods at the University of Pittsburgh and the University of Pittsburgh Cancer Institute as part of their overall prostate cancer education.				
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Table of Contents

	<u>Page</u>
Introduction.....	3
Body.....	3
Key Research Accomplishments.....	5
Reportable Outcomes.....	5
Conclusion.....	6

PITTSBURGH TUSKEGEE PROSTATE TRAINING PROGRAM

Alan Wells (Pittsburgh), Timothy Turner (Tuskegee)

INTRODUCTION

We proposed an extended training program for college undergraduates that aims to build a cadre of young investigators of color in prostate cancer. Prostate cancer disproportionately afflicts African-American men; this increased incidence is compounded by issues of access to and utilization of healthcare resources. As such, we feel that it is critically important to recruit researchers from this population if we are to conquer this disease. Numerous programs have attempted to recruit minorities to biomedical research and prostate cancer in particular. Often this involves a short period of research immersion during a summer semester. However, it has been shown that many of these trainees do not persevere in the selected area due to the singular nature of the experience. *We hypothesize that an immersive summer training program works best within a larger college-oriented experience.*

We proposed to test this hypothesis by designing an undergraduate research training program in prostate cancer that starts in the home college at Tuskegee University, immerses the students for 10 weeks in a specific research project with mentors at the University of Pittsburgh, and then continues the research after returning to Tuskegee under the aegis of a collaborating mentor. Thus, the student is to undertake the research over a one- to two-year period allowing the student to partake meaningfully in the full cycle of research – thesis generation, experimental planning, experimentation, presentation, and writing and publication. Thus, students will be recruited and selected at the beginning of the year, develop a project that involves collaboration between mentors at Pittsburgh and Tuskegee, take course that contribute to the project prior to the summer, initiate that project in depth at Pittsburgh, and then return to Tuskegee to continue the work as independent study, and communicate the findings at national meetings and in the literature. This extended involvement not only benefits the trainee but also forges collaborations between individual faculty members at the two different institutions. This should provide for further avenues that facilitate mainstreaming and integration of training and research for other undergraduate, graduate and post-doctoral trainees.

BODY

The accepted Statement of Work (Table 1) described a series of tasks to accomplish the Goals of this training program. We will state the SOW Task and then comment on the work accomplished. In sum, all Tasks were accomplished successfully.

Year 1 (2009)

December 2008 – January 2009, Tuskegee University sophomore trainees will be selected as “Prostate Cancer Scholars” for summer internship at the University of Pittsburgh. This started before the initiation of the funding period. Undergraduates were recruited by posters, emails and announcements at Tuskegee along with targeted students being approached by Tuskegee mentors. Four students were selected. The criteria were grades, research interests, faculty recommendations, and student essays.

February – April 2009, Trainees will be selectively paired with University of Pittsburgh Faculty mentors according to their research interests. All four student trainees were successfully placed in laboratories for the summer term at University of Pittsburgh (Table 1).

Table 1. List of student trainees and mentors.

Student	Project Title	Pitt Mentor	Tuskegee Mentor
Small, Santanna	Regulation Of Gene Expression By Dietary Folate Role Of Phosphoinositide 3-Kinase (PI-3K) For Prostate Tumor Cell Proliferation	Denise O'Keefe	Teshome Yehualaeshet
Jenkins, Jamilah		Jan Pilch	Timothy Turner
Burke, Ryan	Regulation Of STAT3 Expression By Low Nontoxic Doses Of Paclitaxel In Prostate Cancer Cells	Michael Shurin	Temesgen Samuel
Phillips, Zachery	Migration as an Indicator of Metastasis in Prostate Cancer Determining The Regulatory Function of Kaiso on Cell	Alan Wells	Clayton Yates

Table 2. List of student abstracts presented at meetings.

Student	Abstract	Meeting
Small, Santanna	"Regulation of Gene Expression by Dietary Folate"	2009 HBCU-UP National Research Conference, October 29 - November 1, 2009, Washington, DC
Small, Santanna	"Regulation of Gene Expression by Dietary Folate"	The First Joint Annual Research Symposium (11 th Annual HBCU-UP & 37 th Annual Sigma Xi Research Symposia), March 12-13, 2010 Tuskegee, AL
Jenkins, Jamilah	"The Role of Phosphoinositide-3 Kinase (PI-3K) for Prostate Tumor Cell Proliferation"	2009 HBCU-UP National Research Conference, October 29 - November 1, 2009, Washington, DC
Jenkins, Jamilah	"The Effects of Epithelial to Mesenchymal Transition (EMT) on RC77 Prostate Tumor Cells"	The First Joint Annual Research Symposium (11 th Annual HBCU-UP & 37 th Annual Sigma Xi Research Symposia), March 12-13, 2010 Tuskegee, AL
Burke, Ryan	"Regulation of STAT3 Expression by Low Nontoxic Doses of Pacitaxel in Prostate Cancer Cells". (**Ryan Burke was a 2 nd Place winner in the Biological Sciences poster competition**)	2009 HBCU-UP National Research Conference, October 29 - November 1, 2009, Washington, DC
Phillips, Zachery	"Determining The Regulatory Function of Kaiso on Cell Migration as an Indicator of Metastasis in Prostate Cancer". (**Zachery Phillips was a winner in the poster competition--\$250 poster presentation award winner**)	Annual Biomedical Research Conference for Minority Students (ABRCMS), November 4-7, 2009, Phoenix, AZ

May 2009 – August 2009, Trainees will travel to the University of Pittsburgh to begin their 10-week prostate cancer research experience. All four students undertook a summer of research under the aegis of the Summer Undergraduate Research Program of the Cellular and Molecular Pathology Graduate Program, as described in the proposal. This provided didactic sessions and workshops in grant and paper writing and admission planning for graduate and medical schools. All four students were successful in their work and were invited by their mentors to return for a second summer. This is a key outcome being tracked.

August 2009 - May 2010 Trainees will return from University of Pittsburgh, and continue their research training for the upcoming academic year under guidance of Tuskegee University Faculty Mentors. All four trainees established research projects at Tuskegee University that dovetailed with and continued upon the work done at Pittsburgh (Table 1). This has led to the students presenting abstracts at national and regional research meetings (Table 2).

Year 2 (2010)

December 2009 – January 2010, the second group of Tuskegee University sophomore trainees will be selected as “Prostate Cancer Scholars” for summer internship at the University of Pittsburgh. The second round of selection has been completed with three new trainees coming this summer. The process was similar to the preceding year.

KEY ACCOMPLISHMENTS

- Four student trainees were selected as Class of 2009
- All completed the summer training successfully
- All four were invited back for the next summer in the same laboratory
- All four established ongoing research activities at Tuskegee
- All four trainees presented posters or talks at a national meeting
- Three new student trainees were selected as Class of 2010

REPORTABLE OUTCOMES

Abstracts:

2010

Jamilah Jenkins, Jianjun Zhou, Clayton Yates. (2010) The Effects of Epithelial to Mesenchymal Transition (EMT) on RC77 Prostate Tumor Cells. The First Joint Annual Research Symposium (11th Annual HBCU-UP Symposium & 37th Annual Sigma Xi Research Symposium), March 12-13, 2010 Tuskegee, AL Tuskegee, AL. Poster Presentation.

Santanna Small and Denise O’keef. (2010) Regulation of Gene Expression by Dietary Folate. The First Joint Annual Research Symposium (11th Annual HBCU-UP Symposium & 37th Annual Sigma Xi Research Symposium), March 12-13, 2010 Tuskegee, AL Tuskegee, AL. Poster Presentation.

2009

Ryan K. Burke, Galina V. Shurin, Michael R. Shurin. (2009) Regulation of STAT3 Expression By Low Non Toxic Doses of Paclitaxel in Prostate Cancer. HBCU-UP National Research Conference, Washington, DC. Poster Presentation. ****2nd Place Prize Winner: Ryan Burke; Category: Poster Presentation; Subject Area: Biological Sciences.**

Jamilah Jenkins, Lynn Knowles, Jan Pilch. (2009) The Role of Phosphoinositide-3 Kinase (PI-3K) for Prostate Tumor Cell Proliferation. HBCU-UP National Research Conference, Washington, DC. Poster Presentation.

Santanna Small and Denise O'keef. (2009) Regulation of Gene Expression by Dietary Folate. HBCU-UP National Research Conference, Washington, DC. Poster Presentation.

Zachery Phillips, Qian Wu, Alan Wells, Clayton Yates. Determining the Regulatory Function of Kaiso on Cell Migration as an Indicator of Metastasis in Prostate Cancer. Annual Biomedical Research Conference for Minority Students (ABRCMS), Phoenix, AZ. Poster Presentation. –
****\$250 Award Winner: Zachery Phillips; Poster Presentation.**

CONCLUSIONS

The first year of this three-year training award has successfully reached and exceeded defined milestones. The systems are firmly in place to implement the following years' cadre of trainees.

Importance/Implications: The Key Accomplishments above firmly demonstrate the ability to establish a summer training program that has continuity with the home HBCU and the summer program itself. The outcomes over time will test whether this produces trainees more committed to research and/or prostate cancer than the usual one summer session disconnected from the home institution.

Recommended changes: The feedback from the trainees and mentors is that there is a learning curve during the first half of the summer program. Thus, the momentum gained during the last month of summer training needs to be seamlessly transferred to the home institution with a continuation project, that holds the promise not only of return the second summer, but of leading to a publication. We have decided to emphasize the continuity of the program to attain lasting outcomes.